### *Amendments to the Claims*

The listing of claims will replace all prior versions, and listings of claims in the application.

1.    (Currently Amended)  A modem comprising:

a carriergroup transmitting means configured to be coupled to a transmission channel;

a carriergroup receiving means configured to be coupled to the transmission channel for receiving parameters relating to a plurality of carriers in the transmission channel;

a carriergrouping means, configured to be coupled to the carriergroup transmitting means and to the carriergroup receiving means, for determining ~~at least one~~ a plurality of carriergroup ~~parameter~~ parameters and at least one dynamically variable size carrier group for the plurality of carriers in the transmission channel based on the parameters received by the carriergroup receiving means; and

a tone decoder configured to be coupled to the transmission channel;

wherein the ~~at least one~~ plurality of carriergroup ~~parameter~~ parameters comprises a carriergroup gain parameter and is used to dynamically set up the tone decoder;

wherein the carriergroup transmitting means transmits at least one message to the transmission channel comprising the ~~at least one~~ plurality of carriergroup ~~parameter~~ parameters and the at least one carrier group.

2.    (Currently Amended)  The modem of claim 1 wherein the ~~at least one~~ plurality of carriergroup ~~parameter~~ parameters transmitted by the carriergroup transmitting means ~~is~~ comprises a carriergroup SNR parameter for the plurality of carriers.

3.    (Currently Amended)  The modem of claim 1 wherein the ~~at least one~~ plurality of carriergroup ~~parameter~~ parameters ~~is~~ comprises a worst case SNR for the at least one carriergroup.


4.    (Currently Amended)  The modem of claim 1 wherein the ~~at least one~~ plurality of carriergroup ~~parameter~~ parameters ~~is~~ comprises a carriergroup bitloading parameter.


5-6.    (Cancelled)


7.    (Currently Amended)  The modem of claim 1 further comprising:

means for using the at least one message to the transmission channel comprising the ~~at least one~~ plurality of carriergroup ~~parameter~~ parameters and the at least one carrier group to set up a tone encoder in a far-end modem coupled to the transmission channel.


8.    (Currently Amended)  A method for grouping a plurality of carriers in a DMT communication system, the method comprising the steps of:

determining at least one dynamically variable sized carrier group for the plurality of carriers;

determining ~~at least one~~ a plurality of carriergroup ~~parameter~~ parameters for the at least one carrier group;

using the ~~at least one~~ plurality of carriergroup ~~parameter~~ parameters to dynamically set up a tone decoder, wherein the plurality of carriergroup parameters comprises a carriergroup gain parameter ; and

sending at least one message comprising the ~~at least one~~ plurality of carriergroup ~~parameter~~ parameters.

9.     (Currently Amended)  The method of claim 8 wherein the step of determining a the plurality of carriergroup parameter parameters for the carriergroup comprises:

determining a carriergroup signal-to-noise ratio for the at least one carrier group.

10.    (Previously Presented)  The method of clam 9 wherein the carriergroup signal-to-noise ratio for the at least one carrier group is a worst case signal-to-noise ratio for the at least one carrier group.

11.    (Currently Amended)  The method of claim 8 wherein the step of determining a the plurality of carriergroup parameter parameters for the carriergroup comprises:

determining at least one carriergroup bitloading for the at least one carriergroup.

12-13. (Cancelled)

14.    (Currently Amended)  The method of claim 8 wherein the at least one message comprising the at least one plurality of carriergroup parameter parameters is used to set up a tone encoder in a far end modem.

15.    (Currently Amended)  A method for grouping a plurality of carriers in a DMT communication system, the DMT communication system comprising a near end and a far end modem, the method comprising:

determining at least one dynamically variable sized carriergroup from the plurality of carriers;

determining a carriergroup signal-to-noise ratio for the at least one carriergroup;

determining a carriergroup bitloading and a carriergroup gain for the at least one carriergroup based on the carriergroup signal-to-noise ratio;

using the carriergroup bitloading and the carriergroup gain for the at least one carriergroup for <u>dynamically</u> setting up a tone decoder in the near end modem; and

using the carriergroup bitloading and the carriergroup gain for the at least one carriergroup for transmitting messages from the near end modem to the far end modem.

16. (Previously Presented) The method of claim 15 wherein the carriergroup signal to noise ratio for the at least one carriergroup is a worst case signal to noise ratio for the plurality of carriers.

17-18. (Cancelled)

19. (Original) The method of claim 15 wherein the communication system is a VDSL system.

20. (Currently Amended) A modem for grouping a plurality of carriers in a DMT communication system coupled to a far-end modem via a transmission channel, the modem comprising:

carriergrouping means for determining multiple dynamically variable sized carrier groups for the plurality of carriers and for determining ~~at least one~~ <u>a plurality of</u> carriergroup ~~parameter~~ <u>parameters</u> for each of the multiple carrier groups;

carriergroup transmitting means for transmitting messages comprising the ~~at least one~~ <u>plurality of</u> carriergroup ~~parameter~~ <u>parameters</u> to the far-end modem via the transmission channel, to enable the far-end modem to send and receive messages using the multiple carrier groups; and

a tone decoder coupled to the transmission channel wherein the ~~at least one~~ plurality of carriergroup ~~parameter~~ parameters is used to <u>dynamically</u> set up the tone decoder and wherein the plurality of carriergroup parameters comprises a carriergroup gain parameter.

21.    (Currently Amended)   The modem of claim 20 wherein the ~~at least one~~ plurality of carriergroup ~~parameter~~ parameters ~~is~~ <u>comprises</u> a signal to noise ratio.

22.    (Currently Amended)   The modem of claim 20 wherein the <u>plurality of</u> carriergroup ~~parameter~~ parameters for each of the multiple carrier groups ~~is~~ <u>comprises</u> a worst case signal-to-noise ratio for the specified carrier group.

23.    (Currently Amended)   The modem of claim 20 wherein the <u>plurality of</u> carriergroup ~~parameter~~ parameters ~~is~~ <u>comprises</u> a carriergroup bitloading parameter.

24-25. (Cancelled)

26.    (Currently Amended)   The modem of claim 20 wherein the messages comprising the ~~at least one~~ <u>plurality of</u> carriergroup ~~parameter is~~ <u>parameters are</u> used to set up a tone encoder in the far-end modem coupled to the transmission channel.

27.    (Previously Presented)   The method of claim 15 wherein the carriergroup bitloading and the carriergroup gain for the at least one carrier group is used to set up a tone encoder in a far end modem.